

A GUIDE TO LOCAL LAND USE PLANNING **FOR AGRICULTURE OPERATIONS**

Regulatory Guidance Document

This is not a complete listing of all the rules and regulations for CFOs and CAFOs, but only a highlight of the major components which seem to draw the most questions and concerns.

Livestock facilities in Indiana may be subject to one of two environmental regulatory programs administered by the Indiana Department of Environmental Management (IDEM). Some operations do not fall within the parameters of either permitting process.

CFOs (Confined Feeding Operations) 327 IAC 16-7-2

- Applies to person who owns, designs, constructs, operates, or closes a CFO or who is responsible for application of manure in Indiana from a CFO
- Confinement
 - A. Animals must be confined, fed and maintained for at least 45 days in any 12 month period
 - B. Crops, vegetation, forage growth, or post-harvest residue not sustained in the normal growing season over at least 50% of the lot or facility
- Minimum number of animals
 - A. 300 Cattle
 - B. 600 swine or sheep
 - C. 30,000 fowl
- Facilities with populations below the minimum number of animals that violate the water pollution control laws
- It is a state program, authorized by state statute established by legislature
- Approval is valid for 5 years and must be renewed
- Performance standards
 - A. Designed and managed to avoid unpermitted discharges into waters of the state and minimize leaks and seepage
 - B. Manure must be staged or applied in such a manner
 - 1. Not to enter or threaten to enter waters of the state
 - 2. To prevent run-off, ponding for more than 24 hrs, and spills
 - 3. To minimize nutrient leaching beyond the root zone
- Design and construction standards
 - A. Application requirements
 - 1. Waste management system drawing
 - 2. Soil and water table information from test holes
 - 3. Manure management plan
 - a) Procedure for soil testing-every 3 years
 - b) Procedure for manure testing-every 3 years
 - 4. Plot maps
 - a) Soil survey maps

- b) Topographical map with public water supplies within 1000 feet
 - c) Location of waste management systems
 - d) Boundaries of CFO and manure application areas
- 5. Farmstead plans
 - a) Waste management systems and all residences, surface waters of the state, roads, water wells, characteristics of karst terrain, drainage patterns, property boundary lines, outfalls of subsurface drainage structures, drainage inlets
 - b) Diversion of uncontaminated surface water
- 6. Public notice requirement
 - a) Letter from applicant about the application's submittal to each person owning and residing on land adjoining proposed CFO site
 - b) Notice from IDEM about the application's submittal to local officials, such as county commissioners
 - c) Public notice from IDEM about 30-day public comment period
 - d) IDEM notice to applicant, local officials, adjacent property owners and residents, and other known interested parties upon agency decision.
- B. Waste management system
 - 1. Must not be constructed
 - a) In karst terrain or above a mine except with approval of IDEM commissioner based upon site-specific information
 - b) In a floodway
 - c) In a 100 year flood plain unless access is 2 feet above 100 year flood plain
 - d) In soil with seasonal high water table unless water table is lowered below waste management system
 - 2. Setbacks
 - a) 1000 feet from public water supply
 - b) 300 feet from surface waters of the state, drainage inlets, sinkholes, off-site water wells
 - c) 100 feet from on-site wells, property lines, and public roads
 - d) Solid manure storage structure that contains manure and prevents water from entering the structure must be maintained to have a minimum setback of 100 feet from surface waters, drainage inlets, sinkholes, and off-site wells
 - 3. Design requirements
 - a) Base must be 2 feet above bedrock or, if in karst terrain, at distance commissioner determines
 - b) Drainage system to lower seasonal water table must have access point for sampling
 - c) If determined by the Commissioner, with the basis of that determination provided in writing, to protect human health

IDEM may require monitoring systems, liners, higher compaction, innovative technology, or other measures

4. Storage capacity
 - a) 180 days storage for manure, bedding, net average rainfall, and run-off from 25 year, 24 hour rainfall from drainage area around manure storage structure
 5. Uncovered liquid manure storage structure
 - a) 2 feet of freeboard
 - b) Emergency spillway directed to secondary containment, manure storage structure, or vegetative management system and handle 50 year, 24 hr rain event
 6. Concrete storage structures
 - a) Use concrete mix that minimizes cracking, with properly spaced joints, adequate reinforcement steel, and the use of water stops
 7. Earthen manure storage structures
 - a) Seepage rate must not exceed 1/16th inch per day
 - b) Certified by professional engineer
 - c) Additional requirements if necessary to protect environment
 8. Solid manure storage structures
 - a) Not constructed in sand or gravel soils unless has liner
 - b) Precipitation directed away from structure unless can be collected
 9. Other manure storage structures
 - a) Underground steel tanks prohibited
 - b) Plastic and fiberglass tanks and above ground steel tanks have design requirements
 10. Vegetative management systems
 - a) Settling basin or low velocity channel must be between vegetative management system and source of contaminated run-off
 - b) Minimum dimensions based upon 25 year, 24 hour precipitation event
 11. Constructed wetlands
 - a) Discharge of treated effluent done in compliance with state and federal law
 - b) If no discharge of treated effluent, must apply according to manure application requirements
- Operational standards
 - A. Uncovered liquid manure storage minimum freeboard of two (2) feet
 - B. Documented inspection of waste management structures once per month
 - C. Earthen berms for manure storage structures must be stabilized with vegetation or alternative control measures and allow for visual inspection
 - D. Pumping, dumping, or leakage of manure from transfer vehicle on roads and into waters is prohibited

- E. Emergency spill response plan must be created
- Land application of manure
 - A. Acreage requirement based upon agronomic rates of available nitrogen
 - B. Manure and litter staged at application site for more than 72 hours must be covered and applied within 90 days
 - C. Staging prohibited within 300 feet of surface waters of state, drainage inlets, or wells unless there is a barrier or a surface gradient that contains or directs contaminated water away
 - D. Staging prohibited on area with slope greater than 6% or on standing water or waterway
 - E. Spray irrigation
 - 1. Conducted to prevent equipment leaks
 - 2. Not where less than 20 inches of soil above bedrock
 - 3. Limited application in flood plains
 - F. No application from road or to saturated ground
 - G. Application to highly erodible land in limited circumstances
 - H. Application to frozen ground
 - 1. Not on land with greater than 2% slope and inadequate residue
 - 2. No spray irrigation
 - I. Setbacks

Known feature	Less than or equal to 6% slope; or residue cover-liquid	Greater than 6% slope-liquid	Liquid injection or single pass incorporation	Liquid incorp., application to pasture, solid manure
Public water supply	500	500	500	500
Surface waters of the state	100	200	25	50
Sinkholes	100	200	25	50
Wells	100	200	50	50
Drainage inlets	100	200	5	50
Property lines and roads	50	50	0	10

- J. Setbacks may change if filter strips or barriers exist
- Closure requirements

CAFOs (Concentrated Animal Feeding Operations) 327 IAC 5-4 and 327 IAC 15-15

- Confinement
 - A. Animals must be stabled or confined and fed for at least 45 days in any 12 month period
 - B. Crops, vegetation, forage growth, or post-harvest residue not sustained in the normal growing season over at least 50% of the lot or facility
- Minimum number of animals
 - A. 700 dairy cows
 - B. 1,000 veal calves or mature cattle other than dairy or veal
 - C. 2,500 swine over 55 lbs
 - D. 10,000 swine under 55 lbs
 - E. 500 horses
 - F. 10,000 sheep
 - G. 55,000 turkeys
 - H. 30,000 laying hens or broilers (liquid manure system)
 - I. 125,000 chickens (dry manure system)
 - J. 8,200 laying hens (dry manure system)
 - K. 30,000 ducks (dry manure handling)
 - L. 5,000 ducks (liquid manure handling)
- Types of permits
 - A. General permits
 - 1. Same requirements for all operations
 - 2. Based upon size but will change to those who discharge or propose to discharge in response to a 2nd Circuit Court decision
 - B. Individual permits
 - 1. For those operations who discharge pollutants to waters (regardless of size)
 - 2. Operations who could have general permit but seek individual permit (discharging non contact cooling water is a good example)
- Federal Program under the Clean Water Act
 - A. Ultimate authority with EPA-Indiana has received approval to administer its own version of the rule
 - B. IDEM regulates in Indiana but EPA may still inspect farms
 - C. Odor is not regulated
 - D. Federal air study being done to see if regulations need to be developed in relation to the Clean Air Act
- Public Notice requirement
 - A. General permit
 - 1. The General Permit rule was public noticed when drafted and adopted. CAFO general permits do not undergo public comment
 - 2. Applicant submits “Notice of Intent Letter” (NOI) to seek coverage under the general permit rule
 - 3. Applicant notice required to each person owning and residing on land adjoining proposed CAFO site and county commissioners

4. IDEM places a legal notice in the local newspaper regarding the submitted NOI
 5. Public can only comment on the eligibility of the applicant for general permit coverage
- B. Individual permit
1. Applicant notice required to each person owning or residing on land adjoining proposed CAFO site and all county commissioners
 2. IDEM places a legal notice in the local newspaper regarding the submitted application
 3. 30 day draft permit public comment period
- Permit valid for 5 years and must be renewed
- Construction of facilities based upon CFO rule
 - Farmer inspection of facility
 - A. Documented weekly inspection of structures
 - B. Documented daily inspection of waterlines
 - Extensive record keeping
 - Adequate waste storage-180 days per CFO rule
 - Management of manure
 - A. Manure, litter, and process wastewater storage
 1. Open storage structures must have minimum freeboard of 2 feet
 2. Documented weekly inspection of manure storage
 3. Earthen berms stabilized with vegetation or alternative erosion control measures
 4. Structures maintained to allow for visual inspection
 5. Manure and litter staged at application site for more than 72 hours must be covered and applied within 90 days
 6. Staging prohibited within 300 feet of surface waters of state, drainage inlets, or wells unless there is a barrier or a surface gradient that contains or directs contaminated water away
 7. Staging prohibited on area with slope greater than 6% or on standing water or waterway
- B. Soil conservation practice plan
1. In compliance with NRCS conservation practice standards
 2. Specify for each field receiving manure how to
 - a) Reduce soil erosion to a tolerable loss (T)
 - b) Minimize nutrient loss through leaching and run-off
 3. Must contain
 - a) Soil map clearly showing fields subject to conservation practices
 - b) A description of soil types
 - c) Slope of land application areas
 - d) Identification of appropriate site-specific conservation practices to reduce soil erosion and control run-off
 - e) Identification of appropriate methods to minimize nutrient leaching
 - f) Plan for application to frozen or snow covered ground

- g) Identify highly erodible land
- C. Nutrient management requirements
 1. Soil testing for phosphorus every three years
 2. Test manure, litter, and process wastewater for nitrogen and phosphorus annually
 3. Follow NRCS 590 standard
 - a) Sampling and testing of soil, manure, litter, and process wastewater
 - b) Land application rates based on nitrogen or phosphorus depending on the P level
 4. Setback requirements (in feet)

Known feature	Less than or equal to 6% slope; or residue cover	Greater than 6% slope	Injection or single pass incorporation	Solid manure with incorporation within 12 hours
Public water supply	500	500	500	500
Surface waters of the state	100	200	25	50
Sinkholes	100	200	25	50
Wells	100	200	50	50
Drainage inlets	100	200	5	50
Property lines and roads	50	50	0	10

5. Setbacks may change if filter strips or barriers exist
 6. No application from road or to saturated ground
 7. Application to highly erodible land in limited circumstances
 8. Weather forecasts must be observed 24 hours in advance and after planned land application in order to avoid applying manure when potential of rain causing run-off is predicted
 9. Field tiles must be inspected during and following application
 10. Spray irrigation
 - a) Conducted to prevent equipment leaks
 - b) Excessive application not allowed (application rate exceeds infiltration rate of soil)
 - c) Not where less than 20 inches of soil above bedrock
 - d) Limited application in flood plains
 11. Application to frozen ground
 - a) Not on land with greater than 2% slope unless 40% residue
 - b) Not in flood plain
 - c) No closer than 200 feet to surface water
 - d) Application rate no more than 50% of agronomic rate of nitrogen
- Emergency spill response plan

- Storm water pollution prevention plan
 1. Description of clean water diversion.
 2. Practices to minimize pollutants in storm waste discharges.
 3. Monitoring plan.
- Closure requirements

IDEM CFO/CAFO REGULATION

Myths and Facts

PERMITTING

Myth: IDEM does not take into consideration any surrounding water bodies, aquifers, etc. when either reviewing plans for a new building site or approving a manure application plan.

Fact:

Surface water bodies

- a. The CAFO/CFO facility design requirements include setbacks from surface water bodies, sinkholes and wells. These setbacks were established as pollution prevention setbacks by providing a buffer area between the waste storage and the water source.
- b. There are also setbacks within the land application requirements serving as pollution prevention methods. The setbacks increase as the slope of the site increases and liquid manure application setbacks are more stringent than solid or dry manure setbacks.

Aquifers

- a. The CAFO/CFO facility design requirements are intended to protect groundwater by specifying minimal leakage allowance from the storage. Concrete structures must be designed to be structurally sound and water tight and meet the national American Concrete Institute (ACI) Code #318. Earthen lagoons must be equipped with a liner constructed to minimize leakage and not to exceed a rate of loss of 1/16th inch per day.
- b. Land application activities must be done in a manner that minimizes leaching beyond the root zone of the crop being grown or to be grown. Since nitrogen is mobile in the soil and human health effects occur due to high nitrates in drinking water IDEM established maximum rates of application based on nitrogen. Applications must not exceed the nitrogen requirement of the crop. This effectively minimizes the potential of excess nitrogen remaining in the soil after the crop.

Sensitive Surface Water Bodies and Aquifers

The CFO/CAFO rules allow for IDEM to identify “sensitive areas” near a proposed or existing farm and impose additional or different requirements in order to address the sensitive characteristic of the farm site. The review process for each application includes responding to any site characteristic that results in increased concern and consideration if additional protective measures should be imposed. This has occurred numerous times over the history of the program.

Myth: IDEM never denies a confined feeding permit application.

Fact: IDEM has historically provided three NODs (notice of deficiencies) to solicit responses from applicants regarding deficiencies in their applications. If an applicant fails to respond after the third NOD, IDEM will deny the permit request. In virtually all cases, the applicant responds to the NODs and supplements the application to comply with all requirements. Producers either meet IDEM's requirements, or if they cannot meet their requirements, they voluntarily withdraw their application. The voluntary withdrawal makes a formal denial unnecessary.

OPERATIONAL REQUIREMENTS

Myth: The Manure Management Plan (MMP) is not an enforceable part of the IDEM permit (i.e. don't know where manure being applied).

Fact: When a CFO / CAFO permit is submitted, it must identify a minimum amount of acreage available for land application. If other land is used for application, this must be documented in the operating record (i.e. land use agreement, map). The operating record must be available at the facility for inspection at all times. However, the CFO / CAFO approval does not need to be amended. IDEM permits are essentially non site specific regarding land application sites. According to IDEM, they do not require amendment because they do not want to make it a burdensome process for producers to apply to as much acreage as possible. MMPs also document procedures for soil and manure testing. If a farm does not test their soil or manure at the frequency reported in their MMP, enforcement can be initiated by IDEM.

Myth: Manure coming from other states is not regulated by IDEM.

Fact: IDEM's authority to regulate CFOs and CAFOs is limited to those operating in Indiana and deals primarily with water quality. Manure brought from out of state from a facility that is not part of a CFO or CAFO program and staged on land is regulated as any other substance brought into the state would be regulated. That is, it may not cause or contribute to a polluted condition. IDEM's general authority includes IC § 13-18-4-5 and IC § 13-30-2-1. Manure brought from out of state that is from a regulated CFO or CAFO and staged on land must be handled and applied in accordance with the requirements of Indiana's CFO or CAFO program, depending on the classification of the operation.

IC § 13-18-4-5

It is unlawful for any person to throw, run, drain, or otherwise dispose into any of the streams or waters of this state, or to cause, permit, or suffer to be thrown, run, drained, allowed to seep, or otherwise disposed into any waters, any organic or

inorganic matter that causes or contributes to a polluted condition of any waters, as determined by a rule of the board adopted under IC § 13-18-4-1 and IC §13-18-4-3.

IC § 13-30-2-1

Specific acts prohibited

Sec. 1. A person may not do any of the following:

(1) Discharge, emit, cause, allow, or threaten to discharge, emit, cause, or allow any contaminant or waste, including any noxious odor, either alone or in combination with contaminants from other sources, into:

(A) the environment; or

(B) any publicly owned treatment works;

in any form that causes or would cause pollution that violates or would violate rules, standards, or discharge or emission requirements adopted by the appropriate board under the environmental management laws.

Myth: Producers are not currently required to have a Nutrient Management Plan (NMP).

Fact: Producers with an IDEM CAFO permit are considered to have a NMP.

New Source CAFOs must comply with the NRCS 590 Nutrient Management Standard when manure is first applied from the facility. A Soil Conservation Practice Plan (SCPP) must also be implemented prior to the first land application events on land owned or controlled by the CAFO. Existing facilities that were newly defined as CAFOs have been given until 2008 to develop and implement their SCPP.

As prescribed by the EPA in their 2003 NPDES CAFO rule, a Nutrient Management Plan (NMP) must be implemented by each CAFO that include best management practices and procedures necessary to implement applicable effluent limits and standards. The NMP must, to the extent applicable:

1. Ensure adequate storage.
2. Ensure proper management of mortalities.
3. Ensure that clean water is diverted from the production area.
4. Ensure no direct contact of animals to surface waters.
5. Ensure that chemicals or other contaminants handled on-site are not disposed within manure storage or storm water.
6. Implement site specific conservation practices to control runoff and nutrient migration from the land application sites.
7. Identify protocols for manure and soil testing.
8. Establish protocols to determine site specific application rates to ensure appropriate utilization of applied nutrients.
9. Identify specific records to be maintained to document the implementation of and maintenance of the NMP components.

The following sections of the IDEM CAFO rule address most of these requirements:

1. The CAFO rule, 327 IAC 15-15-7(b), states that design and construction must comply with the CFO rule, specifically 16-5 and 16-8, which require at least 180 days of storage capacity for manure and process waste water.
2. The CAFO rule states in 327 IAC 15-15-4(7) that mortalities may not be placed in the liquid manure storage system and 15-15-10(h) which says that a mortality compost facility must prevent runoff and that mortality compost must be land applied in compliance with the manure land application requirements.
3. The CAFO rule states in 327 IAC 15-15-18(b) that the storm water pollution prevention plan must describe clean water diversion used at the production area, including feed storage areas.
4. The CAFO rule, 327 IAC 15-15-4(b), states that animals in any confinement area cannot have direct access to surface waters.
5. Not addressed in rule.
6. The CAFO rule, 327 IAC 15-15-11, requires the development of a soil conservation practice plan (SCPP) for land application sites under the control of the CAFO to:
 - a. reduce soil erosion to T (tolerable levels)
 - b. minimize nutrient loss through leaching and prevent runoff
7. 327 IAC 15-15-12 specifies the frequency of manure and soil testing
8. 327 IAC 15-15-12 (d) and (e) specifies applying manure in accordance with the NRCS 590 Standard
9. 327 IAC 15-15-17 requires an Operating Record be maintained on the farm and specifies the required content.

Therefore, IDEM's permit and nutrient management requirements are equivalent and acceptable to meet EPA's Nutrient Management Plan (NMP) requirements.

Myth: Producers smaller than a CFO are not regulated by IDEM.

Fact: 327 IAC 16-2-5 "Confined feeding operation" defined

"Confined feeding operation", as defined in IC § 13-11-2-40, means any:

(3) animal feeding operation that causes a violation of:

(A) water pollution control laws;

(B) any rules of the water pollution control board; or

(C) IC § 13-18-10.

Based on this definition, IDEM has the authority to require a producer smaller than that of a CFO to enter the CFO program if they have a spill. Even absent being required to obtain an IDEM permit, they would fall within the general prohibitions that prohibit any person from polluting waters of the state (see IC § 13-30-2-1 and IC § 13-18-4-5).

Myth: A recipient of manure from the CAFO operator who then applies the manure is not regulated by IDEM.

Fact: Under the marketing requirements at 327 IAC 15-15-15, a CAFO operator must provide an information sheet to the first recipient that must contain a statement that it is unlawful to allow manure to enter any waters of the state and the application requirements in the CAFO rule.

Myth: A recipient of manure who builds a storage structure near the application site does not need to comply with IDEM's manure storage structure design and construction regulations.

Fact: IDEM is not currently regulating these structures. However, this is not a significant area of concern to IDEM because it is predominately dry poultry litter. However, this could pose a greater problem in the case of liquid manure. It is important to note that the recipient must not cause or contribute to a polluted condition of waters (see IC § 13-18-4-5 and IC § 13-30-2-1).

EPA AIR AGREEMENT

EPA is currently conducting a \$9 million dollar livestock air emissions study. On January 31, 2005, EPA published a notice in the Federal Register offering animal feeding operations (AFOs) an opportunity to sign a voluntary Consent Agreement, which establishes a monitoring study for emissions at such operations. In addition, livestock facilities entering into this agreement paid a modest civil penalty and received a final order, liability release, and covenant not to sue resolving potential past violations of the Clear Air Act and the hazardous substance release notification provisions of Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and Emergency Planning and Community Right to Know Act (EPCRA). As of January 2005, 2,681 producers had signed agreements and will provide the sample for the monitoring program.

The study is being lead by Professor Al Heber, a Purdue University researcher. Heber's monitoring study plan has been finalized and the monitoring survey will commence this winter. Data collection will take place for 24 months. The study will quantify air emissions and compare them to existing thresholds for dust, ammonia, and hydrogen sulfide. Under the CAA, CERCLA, and EPCRA, a release of >100 lbs of ammonia or hydrogen sulfide within 24 hours is a reportable quantity (RQ). Climatic conditions, facility size, species, and type of waste system will be considered when evaluating emissions.

The EPA will use the data to develop emissions estimates and new compliance standards, guidelines, and enforcement policies. Within 18 months of completion of the study, the EPA plans to publish the emissions and establish their estimating methodology. This methodology will allow AFOs to estimate their emission and comply with federal regulatory requirements.

ZONING REGULATION VERSUS STATE REGULATION

Local units of government are given the ability to exercise planning and zoning powers through the Indiana Planning and Zoning Law (*Indiana Code Title 36 Article 7 Planning and Development*). Plan commission responsibilities include preparing a comprehensive plan, preparing a zoning ordinance and a subdivision control ordinance, making recommendations to the legislative body on proposals to amend the text of the zoning ordinance or subdivision control ordinance, and approving or denying proposals to subdivide land and development plans.

Planning and zoning is essentially about separation of uses, or *where* an activity takes place. Local government plays a critical role in making such decisions, which complement state regulation of *how* that activity takes place. Plan commissions have many responsibilities, but their most important duty is to develop and recommend a plan for the future of the community. Focusing on this fundamental planning responsibility is critical to ensure it is effectively implemented

Plan commissions must observe the requirements of the state planning law when exercising the power to implement local zoning regulation. In addition, plan commissions must operate within limitations established by the state legislature and judiciary. With regard to livestock production, these limitations apply to state environmental programs administered by IDEM and the Office of the Indiana State Chemist. These agencies comprehensively regulate our states livestock producers to ensure environmental quality. The ILRC will continue to develop guidance materials that provide clarity regarding the role of local zoning regulation.